

LISTING OF CLAIMS

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1. (previously presented) An X-ray tube, comprising:

an anode assembly, comprising:

a target for emitting X-rays upon irradiation with an electron beam,

a rotor shaft coupled to a motor rotor system and the target, the rotor shaft configured to rotate the target, and

a bearing system supporting the rotor shaft; and

a cathode assembly, comprising:

a cathode configured to emit the electron beam, and

an insulator isolating the cathode from ground potential, wherein the insulator and the motor rotor system are located on the same side of the target and wherein the insulator is generally parallel and radially offset to the rotor shaft.

2. (original) The X-ray tube of claim 1, wherein the insulator comprises a conical insulator.

3. (canceled).

4. (original) The X-ray tube of claim 1, wherein the insulator is offset in a radial direction to the motor rotor system.

5. (previously presented) The X-ray tube of claim 1, wherein the bearing system distributes load substantially evenly.

6. (previously presented) The X-ray tube of claim 1, wherein the bearing system straddles the target.

7. (previously presented) An X-ray tube, comprising:  
an anode assembly, comprising:  
a target for emitting X-rays upon irradiation with an electron beam,  
a rotor shaft coupled to a motor rotor system and the target, the rotor shaft  
configured to rotate the target, and  
a bearing system supporting the rotor shaft; and  
a cathode assembly, comprising:  
a cathode configured to emit the electron beam, and  
an insulator isolating the cathode from ground potential, wherein the X-ray tube  
provides axial coverage of up to 80 mm from the focal spot.
8. (previously presented) The X-ray tube of claim 7, wherein the insulator comprises a  
conical insulator.
9. (canceled).
10. (previously presented) The X-ray tube of claim 7, wherein the insulator is offset in a  
radial direction to the motor rotor system.
11. (previously presented) The X-ray tube of claim 7, further comprising a collimator to  
direct the beam to the subject.
12. (previously presented) The X-ray tube of claim 7, wherein the bearing system  
distributes load substantially evenly.
13. (previously presented) The X-ray tube of claim 7, wherein the bearing system  
straddles the target.
- 14-18. (canceled).
19. (previously presented - withdrawn) A method for CT imaging, the method  
comprising:  
rotating a gantry about a subject;

emitting X-rays from an X-ray tube mounted on the gantry, wherein the X-ray tube withstands up to 65 g of stress in operation; and  
generating one or more images of the subject based upon the attenuation of the emitted X-rays by the subject.

20. (previously presented - withdrawn) The method of claim 19, wherein rotating the gantry comprises rotating the gantry at greater than three rotations per second.

21. (canceled)

22. (previously presented) An X-ray tube, comprising:  
an anode assembly, comprising:

a target for emitting X-rays upon irradiation with an electron beam,  
a rotor shaft coupled to a motor rotor system and the target, the rotor shaft configured to rotate the target, and

a bearing system supporting the rotor shaft; and

a cathode assembly, comprising:

a cathode configured to emit the electron beam, and  
an insulator isolating the cathode from ground potential;

wherein the X-ray tube provides high-voltage stability of up to 200 kV in operation.

23. (previously presented) The X-ray tube of claim 22, wherein the insulator comprises a conical insulator.

24. (previously presented) The X-ray tube of claim 22, wherein the insulator is offset in a radial direction to the motor rotor system.

25. (previously presented) The X-ray tube of claim 22, wherein the bearing system distributes load substantially evenly.

26. (previously presented) The X-ray tube of claim 1, wherein the bearing system straddles the target.